

**UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

UNITED STATES OF AMERICA,

Plaintiff,

v.

**EGAN MARINE CORPORATION, *in*
personam, MOTOR VESSEL LISA E, *in rem*,
TANK BARGE EMC-423, *in rem*,**

Defendants.

EGAN MARINE CORPORATION,

**Defendant/
Third-Party Plaintiff,**

v.

**EXXON MOBIL CORPORATION and
EXXONMOBIL OIL CORPORATION,**

Third-Party Defendants.

Civil Action No. 08-CV-3160

Judge Leinenweber

**EGAN MARINE CORPORATION’S CONSOLIDATED MOTION IN LIMINE
TO EXCLUDE THE EXPERT WITNESS TESTIMONY OF PETER WAKEFIELD,
HENDRIK VAN HEMMEN, DAVID TUCHOLSKI AND BRIAN HALL AT TRIAL**

NOW COMES Egan Marine Corporation (hereinafter, “EMC”), by and through its undersigned counsel, and, for the reasons stated below, respectfully moves, *in limine*, for the exclusion from trial of the testimony of Plaintiff, the United States of America’s (hereinafter, “the Government”) expert witnesses Peter Wakefield, Hendrik van Hemmen, David Tucholski and Brian Hall.

This pleading exceeds 15 pages in length, however, it consolidates several Motions in Limine and no one motion exceeds 15 pages. Accordingly, like the United States,¹ EMC believes that this pleading's length does not exceed the page limitations set forth under Local Rule 7.1.

¹ Two of the United States' Motions in Limine exceeded the page limitations of Local Rule 7.1, however, the Government maintained that the rule was inapplicable to consolidated motions that replace numerous individual filings. (*See*, ECF Doc. No. 261-1 and 292-1.)

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I. LEGAL STANDARD FOR EXPERT WITNESS TESTIMONY

Federal Rule of Evidence 702 provides that where expert testimony will assist the trier of fact, a qualified expert witness may testify “if (1) the testimony is based upon sufficient facts or data, (2) the testimony is a product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.” Fed. R. Evid. 702; *Happel v. Walmart Stores, Inc.*, 602 F.3d 820, 824 (7th Cir. 2010). Rule 702 requires district courts to perform a “gatekeeping” function before admitting expert scientific testimony in order to “ensure that any and all scientific testimony is not only relevant, but reliable.” *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993); *Happel*, 602 F.3d at 824. A court’s gatekeeping duty applies to all expert testimony, whether scientific or otherwise. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147 (1999).

The trial court’s discretion in admitting expert testimony is two-fold. That is, a party challenging the admissibility of expert testimony can take issue with both the qualifications and the methodology of the proposed expert. *Lewis v. Citgo Petroleum Corp.*, 561 F.3d 698, 705 (7th Cir. 2009). Whether a witness is qualified as an expert can only be determined by comparing the area in which the witness has superior knowledge, skill, experience, or education with the subject matter of the witness’s testimony. *Gayton v. McCoy*, 593 F.3d 610, 616 (7th Cir. 2010) (citing *Carroll v. Otis Elevator Co.*, 896 F.2d 210, 212 (7th Cir. 1990)). Once that first threshold has been crossed, the Court must then determine “whether the reasoning or methodology underlying the testimony is scientifically valid.” *Daubert*, 509 U.S. at 592-93; *Happel*, 602 F.3d at 824.

As the Seventh Circuit routinely notes, “qualifications alone do not suffice.” *Lewis*, 561 F.3d at 705. “A supremely qualified expert cannot waltz into the courtroom and render opinions unless those opinions are based upon some recognized scientific method and are reliable and

relevant under the test set forth by the Supreme Court in *Daubert*.” *Id.* Stated differently, “a district judge asked to admit scientific evidence must determine whether the evidence is genuinely scientific, as distinct from being unscientific speculation offered by a genuine scientist.” *Id.* The Supreme Court has identified the following factors as pertinent to this inquiry into a proposed expert’s methodology: (1) whether the theory has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or potential rate of error; and (4) whether it has been generally accepted within the relevant scientific community. *Daubert*, 509 U.S. at 593-94; *Happel*, 602 F.3d at 824. It is the proponent of the expert that bears the burden of demonstrating that the expert’s testimony would satisfy the *Daubert* standard. *Lewis*, 561 F.3d at 705.

II. THE GOVERNMENT’S EXPERTS

a. Peter J. Wakefield

To testify as an expert at trial, a witness needs to do considerably more than merely surf the internet hoping to locate helpful “facts”, cut and paste what he finds into a “report” and then adopt and repeat the contents of that evidentiary scrapbook as his expert “opinion.” Yet that is precisely what the Government seeks to have Peter J. Wakefield (hereinafter, “Wakefield”) do in this case. Clearly eager to have someone testify about the amount of heat produced by a propane-powered “weed burner,” the Government directed one of its own employees to pretend to be an “expert” on the topic. The unfortunate someone chosen for this unenviable role was Wakefield.

Rather than doing any testing, sampling, modeling, simulation, or measurements himself, Wakefield simply went to Google’s web site, shopped around for whatever basic information he

could find there, and copied and pasted that information into what the Government ultimately produced in discovery as his “expert” report. (*See*, Expert Report of Peter J. Wakefield, attached hereto as Exhibit A, hereinafter “Wakefield Rep.”) To the extent that Wakefield even has an identifiable opinion concerning the heat produced by propane torches, it is based primarily on publicly-available data he found on the marketing websites of various propane accessory retailers. Because Wakefield’s opinion is not based on any particular expertise and because it fails to employ any semblance of the scientific methodology required by the Supreme Court and the Federal Rules of Evidence, the Government cannot be permitted to call him as an expert witness at trial.

*1. Wakefield Is Not At All Qualified As An Expert on Weed Burners.*²

As noted above, this Court must compare the area in which a supposed expert witness has superior knowledge, skill, experience, or education with the subject matter of the witness’s testimony. *Gayton*, 593 F.3d 610, 616 (7th Cir. 2010). In this case, the United States intends to offer Wakefield as an expert witness on the heat output of a propane-fueled weed burner. Wakefield, however, plainly lacks “superior knowledge, skill, experience, or education” with weed burners. Accordingly, his testimony must be excluded at trial.

Wakefield is a professional welder. The torch in question here—a propane-fueled “weed burner”—is not, however, a typical welder’s tool. (*See*, Wakefield Dep., 14:9-13.) A welding kit is fueled by acetylene. By way of contrast, the weed burner at issue here is fueled by

² Throughout this litigation, the parties, counsel, and witnesses have repeatedly referred to the alleged presence and use of a propane-fueled “rosebud” torch aboard the EMC-423. Yet that is a misnomer. As Wakefield noted in his deposition, a “rosebud” actually is a welding torch powered by acetylene, not propane. The correct term for the type of heating torch the Government incorrectly contends caused the explosion aboard the EMC-423 is a “weed burner.” (*See*, Deposition of Peter Wakefield, excerpts attached hereto as Exhibit B, hereinafter “Wakefield Dep.,” 44:11-20.)

propane. (*Id.* at 14:14-19.) Wakefield admits that he has only used a weed burner just a few times: once in a while for preheating metal prior to welding, and also, on occasion, for burning weeds and trash. (*Id.* at 14:21-15:5.) Tellingly, the welding classes Wakefield teaches limit their instruction on the use of weed burners because their use is not consistent with the appropriate welding standards. (*Id.* at 62:13-63:2.)

While Wakefield may have plenty of experience as a welder, he simply lacks the requisite “superior skill, experience or education” on weed burners to qualify him as an expert on them. *Gayton*, 593 F.3d 610, 616 (7th Cir. 2010). As such, his testimony about them must be excluded from the trial of this case.

2. *Wakefield’s Expert Report Epitomizes “Junk Science.”*

The key principle of *Daubert* is that “if an expert witness is to offer an opinion based on science, it must be real science, not junk science.” *Tuf Racing Products, Inc. v. American Suzuki Motor Corp.*, 223 F.3d 585, 591 (7th Cir. 2000). Wakefield’s expert opinion is the epitome of “junk science.” Even assuming, *arguendo*, that Wakefield possessed the requisite qualifications to opine as an expert on the heat produced by a propane-powered weed burner (which he manifestly does not), his methodologies are far from that required under the Federal Rules of Evidence and *Daubert* and, thus, his testimony must be excluded from trial.

Wakefield candidly admits that he performed no testing whatsoever in preparing his expert opinion in this case. (Wakefield Dep., 47:3-6.) Absolutely none. Neither did he even bother to take any measurements. (*Id.* at 47:7-9.) Nor did he conduct any modeling or simulations. (*Id.* at 47:10-12.) He performed no calculations. (*Id.* at 47:13-15.) And he undertook no reconstruction of the weed burner use alleged to be at issue here. (*Id.* at 47:16-19.)

In fact, Wakefield never even physically examined the exemplar torch the Government subpoenaed from EMC until well after he had already prepared his “expert” report in this case. (*Id.* at 22:8-12.) Even then, he still made no measurements nor did any testing.

Wakefield’s “expert opinion” consists of nothing more than a regurgitation of his basic internet research on the topic. (Wakefield Dep., 45:3-7.) The Government asked Wakefield to determine the temperature of the flame produced by a propane fueled rosebud torch. (*Id.* at 44:4-5.) To answer that question, Wakefield simply turned to non-scientific, marketing websites such as www.flameengineering.com (an online propane accessory retailer, the website for which is attached hereto as Exhibit C), www.millerwelds.com (a welding equipment retailer, the website for which is attached hereto as Exhibit D), and Wikipedia.³ (Wakefield Rep., pp. 1, 5.) Ultimately, Wakefield just copied and pasted large portions of these websites together to form his expert “report.” (Wakefield Rep., pp. 2-3, 7-8; Wakefield Dep., 48:20-22.)

In addition merely to repeating what he read was the heat output of a weed burner, Wakefield includes in his expert report even more unscientific musings and a healthy dash of pure speculation. For instance, Wakefield opines that a particular apparatus, the ProHeat 35 Air-Cooled Induction System (an electric powered heating system Wakefield discovered during his surfing safari) could have been a viable alternative to using a weed burner to heat the cargo pump on the EMC-423. (*See*, Wakefield Rep., p. 7.) Wakefield makes this remarkable assertion in the absence of any personal experience with either the apparatus or the pump, any professional knowledge about either one, any idea of how the apparatus might even be plugged in to a power source while the barge is underway, or whether it would or could be approved for use aboard a

³ Interestingly, Wakefield includes references to several online pamphlets of well-known safety organizations, such as the Occupational Safety and Health Administration, the Center for Disease Control, American National Standards Institute, and the National Fire Protection Association. Yet neither Wakefield’s expert report nor his deposition testimony include *any* references to these publications or *any* indication that Wakefield relied on them in forming his “opinion.”

tank barge carrying petroleum cargos. (Wakefield Dep., 51:7-18.) Likewise, Wakefield speculates that a weed burner could melt metal, despite his lack of knowledge about the kinds of metal present aboard the EMC-423, to say nothing of the particular metals that make up the barge's cargo pump. (*Id.* at 55:2-56:21.)

“An expert's work is admissible only to the extent that it is reasoned, uses the methods of the discipline, and is founded on data.” *Naeem v. McKesson Drug Co.*, 444 F.3d 593, 608 (7th Cir. 2006). “Talking off the cuff—deploying neither data nor analysis—is not an acceptable methodology.” *Id.* Indeed, Federal Rule of Evidence 702 only allows an expert witness to testify “if (1) the testimony is based upon sufficient facts or data, (2) the testimony is a product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.” Fed. R. Evid. 702. Wakefield's proposed testimony in this case clearly falls well short of this standard.

First, because Wakefield did no actual testing of the heat produced by a weed burner, his opinion is not based on *any* facts or data. Second, the internet research Wakefield conducted on dealers' commercial websites certainly is not “a product of reliable principles and methods” nor the “methods of the discipline.” *Naeem*, 444 F.3d at 608. Lastly, because he did not even bother to test the exemplar torch in this case, Wakefield did not apply his (unreliable) principles and methods to the “facts of this case.” *Id.* Instead, Wakefield's “opinions” are purely off the cuff guesses wholly devoid of any analysis or scientific methodology.

Finally, the complete inapplicability of the *Daubert* factors to Wakefield's work further highlights the basic principle that opinions like his have no place in the modern courtroom. When analyzing the validity of a proposed scientific methodology, *Daubert* requires a court to assess: (1) whether the theory has been tested; (2) whether the theory has been subjected to peer

review and publication; (3) the known or potential rate of error; and (4) whether it has been generally accepted within the relevant scientific community. *Daubert*, 509 U.S. at 593-94; *Happel*, 602 F.3d at 824. All of these factors are completely inapplicable here because they presuppose at least *some* attempt to employ the scientific method. Instead of any actual scientific testing, Wakefield relied entirely on the editors of Google to do his work for him. Because there is no true methodology behind his opinions, this Court cannot begin properly to evaluate their validity.

This Court must serve as a gatekeeper to keep junk science out of the courthouse. Opinions devoid of any methodology other than logging on to the Google web site are the epitome of the “junk science” Federal Rule of Evidence 702 and *Daubert* aim to prohibit. Accordingly, the opinions of Peter J. Wakefield must be excluded from the trial of this case.

b. Hendrik van Hemmen

Shortly after having a cargo of its product explode aboard the EMC-423, ExxonMobil Corporation (hereinafter, “Exxon”) rushed to retain a full stable of expert witnesses on whom it might be able to call one day. One of those experts was Hendrik Fokko van Hemmen (hereinafter, “van Hemmen”). The problem was that Exxon was *so* prompt in lining up talent that it did so well before the issues that would need to be addressed by them were altogether clear. As a consequence, some of Exxon’s experts were not particularly well-matched to the issues on which they eventually were asked to opine. Van Hemmen fell squarely into that camp. Once Exxon was dismissed from this case, the Government proceeded to adopt van Hemmen as its own. Yet the old problem remains: however talented and capable an expert van Hemmen

may be on some topics, he is patently unqualified to opine on the subjects for which he is being offered in this case.

Van Hemmen is a naval architect, and a marine engineer. His particular focus is on small vessel design. (See, Expert Report of Rik van Hemmen, attached hereto as Exhibit E, hereinafter, “van Hemmen Rep.,” pp. 22-26; *see also*, Deposition of Hendrik Fokko van Hemmen, excerpts attached hereto as Exhibit F, hereinafter “van Hemmen dep.,” 28:4-10.) He is, without question, well-respected in that field. Unfortunately, the Government has chosen to stretch van Hemmen’s testimony well beyond the realm of naval architecture and marine engineering, and even farther beyond his specialty of small vessel design. To be sure, the Government evidently intends to use van Hemmen as something of its Universal Expert: someone who will neatly wrap up all of its evidence in this case and then give the Government’s closing argument from the witness stand.⁴

In his expert report van Hemmen opines on a number of topics well outside of his areas of expertise, including explosion cause and ignition sources, petroleum product hazards, and tank barge operations. Not only does van Hemmen clearly lack expertise in these areas, but he fails to employ the kind of scientific methodology required by the Federal Rules of Evidence and the Supreme Court in *Daubert* and its progeny. Accordingly, all of van Hemmen’s opinions that stray beyond the bounds of his expertise as a naval architect and marine engineer must be excluded from evidence at trial.

⁴ Indeed, van Hemmen admitted as much in his deposition. (Q. ...You were asked by Mr. Ruff a question about your analysis of the testimony in this case, which naturally makes me wonder what analysis were you asked to perform of the testimony in this case? A. ...that came down just from a technical point of view to analyze all these discussions and to put them together and compare them all is really not a technical task. It’s a bookkeeping task. Somebody puts all these pieces together and put in front of the jury and says, “Well, you’ve heard this, you’ve heard that,” and then we get a veracity issue.” (van Hemmen Dep., 376:13-377:19).)

1. *Van Hemmen is not an Explosion Cause and Origin Expert.*

Simply put, van Hemmen is no expert on explosions. His expert report reveals that he has had no educational training nor work experience in that field. (van Hemmen Rep., pp. 22-26.) Indeed, the only reference to *any* fire or explosion experience is a book chapter van Hemmen co-authored on shipyard fire safety in the Industrial Fire Hazards Handbook. Notwithstanding the poverty of his background, training, or experience on the subject, van Hemmen's expert report contains numerous opinions on explosion causes, origins, and ignition sources. For example, in the report's conclusions, van Hemmen includes the following opinions:

1. The explosion originated in the No. 4 Cargo tank.
2. The most reasonable cause of the explosion was the ignition of vapors emanating from the open standpipe.
3. The most reasonable ignition source was the use of a propane torch in the vicinity of the standpipe.

In reaching the foregoing opinions, van Hemmen utterly failed to employ *any* scientific methodology—a fact he candidly admits. When asked in his deposition about ignition source testing, van Hemmen admitted that he did no testing, no modeling, nor any scientific analysis. Instead, van Hemmen concedes that his opinion was nothing more than a “crapshoot.”⁵ (van Hemmen Dep., 313:5-20.) Similarly, when describing the basis for his opinion that the explosion originated in No. 4 of the EMC-423, van Hemmen again admitted that he had done no testing, modeling, or other scientific analysis to get there. (*Id.* at 291:8-292:19.) When describing his opinion that metal to metal contact could not have caused the explosion aboard the

⁵ van Hemmen Dep., 313:5-20 (“Q. Have you done any kind of testing to see at what distance the ignition source would have to be from the standpipe to initiate the explosion in the way you envision it happening here? A. No. Q. Any kind of modeling calculations, scientific analysis, anything to determine what the outer limits of reasonableness are of scientific—to a reasonable scientific certainty whether this could happen? A. Because you can’t do it scientifically. Q. You can’t do it scientifically? A. No. Q. What does that mean? A. Not enough knowledge. Not enough data. It’s just a crapshoot.”).

EMC-423, van Hemmen confessed that that opinion was based solely on the fact that he and his company have not seen such a cause in the past—and *not* on any scientific testing. (van Hemmen Rep., p. 12; van Hemmen Dep., 93:17-94:11.) Perhaps most telling, in a moment of brutal candor, van Hemmen ultimately admitted that he lacks experience on ignition sources and would happily defer to a “true expert.”⁶ (van Hemmen Dep., 258:24-259:17.)

Van Hemmen’s qualifications and the methodology underlying his opinions on the cause and origin of the cargo explosion in the EMC-423 clearly do not satisfy the degree of scientific rigor required by *Daubert* and Rule 702. Van Hemmen admits that he is not a “true expert” in this area, and that his opinions are not based on any scientific methodology. Rather, they are the product of a “crapshoot.” Seventh Circuit jurisprudence is clear: while van Hemmen may be a “genuine scientist” in the area of naval architecture and marine engineering, his opinions related to tank vessel cargo explosions are nothing more than “unscientific speculation.” *Lewis*, 561 F.3d at 705. Accordingly, all of van Hemmen’s opinions relating to the origin, cause, and potential ignition sources of the explosion aboard the EMC-423 must be excluded from trial. *Id.*

2. *Van Hemmen is not an Expert in the Field of Petroleum Products or Refinery Operations.*

Just as van Hemmen is not an explosion expert, neither is he an expert in petroleum products or refinery operations. The *curriculum vitae* included with van Hemmen’s expert report make this clear. (van Hemmen Rep., pp. 22-26.) Even so, van Hemmen is willing to opine that the cargo of CSO loaded into the EMC-423 was an uncontaminated Grade E cargo. (*Id.* at p.

⁶ “A. ...Now there are experts that will—and I’m not that type of expert—who have a lot of knowledge about explosive vapors and might say, no, it’s not a competent source, or yes, it is a competent source. But possible is the term that I will use at my level of expertise. *If there’s a true expert that says otherwise, I defer to him.* Q. When you say you’re not that kind of expert, what do you mean by that? A. I don’t get involved in the amount of energy that is considered to be a competent source in various situations with various vapors with various oxygen levels and explosive limit levels.” (Emphasis added.)

20.) Both his report and his deposition testimony also include substantial discussion of the qualities and characteristics of CSO. Such opinions are inappropriate and inadmissible at trial because van Hemmen has no background, training, or experience in these areas. In fact, in his deposition, van Hemmen freely admitted that he is “not an expert on the chemistry of CSO”⁷ nor has he ever worked directly with its transportation. (van Hemmen Dep., 206:13-18; 239:13-16.) Once again, van Hemmen presents no scientific testing, modeling or analysis to substantiate his opinions regarding the petroleum cargo Exxon loaded into the EMC-423. His opinions in this area are largely speculation or are his merely parroting the opinions of Exxon’s other expert witnesses.

“An expert’s work is admissible only to the extent that it is reasoned, uses the methods of the discipline, and is founded on data.” *Naeem*, 444 F.3d 593, 608 (7th Cir. 2006). “Talking off the cuff—deploying neither data nor analysis—is not an acceptable methodology.” *Id.* Given the foregoing, all of van Hemmen’s opinions regarding the production, handling, quality, and characteristics of CSO are inadmissible and must be excluded from trial.

3. *Van Hemmen is not an Expert in Tank Barge Operations.*

In his expert report, van Hemmen provides a wealth of opinions about the likely behavior of ship and terminal personnel, what constitutes common knowledge within the tank barge industry, and acceptable tank barge practices. (*See e.g.*, van Hemmen Rep. pp. 20-21.) Yet van Hemmen clearly lacks the required expertise to opine on tank barge operations.

An expert witness may be qualified to render an opinion in a given area by “knowledge, skill, experience, training or education.” Fed. R. Evid. 702. In the area of tank barge operations,

⁷ “And you make CSO and there’s still some gasoline ends in the CSO or maybe some—and, you know, we’re going to stop with this discussion and point. I’m not an expert on the chemistry of CSO.” (van Hemmen Depo., 206:14-18.)

however, Van Hemmen lacks all five. He does not hold a Coast Guard mariner's license and never has. (van Hemmen Dep., 80:23-81:3.) He is not a licensed tankerman, nor has he ever been trained for a tankerman license. (*Id.* at 81:4-81:13.) Van Hemmen has never served as a licensed crewmember on *any* commercial vessel, much less aboard a tank barge. (*Id.* at 81:14-82:5.) Indeed, the full extent of van Hemmen's commercial marine operational experience is limited to two four-hour watches he once stood aboard a foreign-flagged tug boat in the Dominican Republic. (*Id.* at 180:4-182:6.)

Tank barge operation is a specialized area of expertise. Unlike scientific disciplines that allow for mastery through education, expertise in vessel operations requires *actual* operational experience. This point is particularly true when, just as van Hemmen attempts to do here, someone purports to testify as an expert on the likely behavior of certain shipboard personnel, on common knowledge within a given maritime industry, and on acceptable practices within that industrial sector. Because van Hemmen lacks any meaningful experience in the area of tank barge operations, this court cannot permit him to provide any opinions in this area.

The Federal Rules of Evidence do not allow the Government to use van Hemmen as a summary witness. He is not a utility infielder to be trotted out to provide expert testimony on any subject it deems fit. *Daubert* and its progeny specifically limit expert testimony to areas in which the expert has specialized expertise and employs scientifically valid methodologies. Consequently, this court must limit all of van Hemmen's opinions that run afoul of these requirements. Specifically, any van Hemmen testimony about explosion cause, origin, or ignition sources, about petroleum products and refinery operations, and about tank vessel operations must be excluded from trial.

c. David Tucholski

The United States proposes to present David Tucholski (hereinafter, “Tucholski”), a Fire Research Engineer with the Bureau of Alcohol, Tobacco, Firearms and Explosives’ Fire Research Laboratory, as an expert witness on various issues relating to the pre-explosion condition and use of a standpipe and a portion of the heat trace system from the EMC-423. (See, Laboratory Report of David R. Tucholski, attached hereto as Exhibit G, hereinafter “Tucholski Rep.”) Like van Hemmen, Tucholski plainly possesses the kind of qualifications that would be needed to serve as an expert on certain discrete topics. Unlike van Hemmen, Tucholski actually conducted some testing to support his opinions. The problem is that the kind of testing Tucholski performed does not draw on any recognized area of expertise. Frankly, the same thing could have been done by any reasonably intelligent sixth-grader.

In this case, Tucholski’s testing, quite literally, consisted of nothing more than his supervising hammering on various replica components of the EMC-423 with a three-pound maul in a vain attempt to simulate the effects of a massive explosion. Despite Tucholski’s best efforts, however, it is clear that a huge explosion capable of ripping a barge’s steel deck into pieces and flinging heavy equipment and other debris hundreds of yards through the air simply cannot be re-created by the swing of a hammer. Tucholski’s methodologies and the application of those methodologies to the facts of this case fail to meet requirements of the Federal Rules of Evidence and the Supreme Court’s pronouncements in *Daubert* (and its progeny). As a result, Tucholski’s testimony must be excluded from trial.

1. Tucholski Lacks the Expertise to Offer the Opinions He Does.

Agents of the United States Coast Guard and the Environmental Protection Agency initially sought Tucholski's help in resolving several questions related to the pre-explosion condition of the EMC-423's standpipe and heat trace system. Specifically, Tucholski was asked to determine: 1) whether the ball valve near the top of the standpipe could have rotated from the closed position to the open position during the explosion; 2) whether the ball valve's handle was attached to the ball valve at the time of the explosion; 3) whether a pipe cap was present atop the standpipe at the time of the explosion; and 4) whether the thermal heat trace line attached to the cargo pump was connected to the rest of the barge's thermal oil heating system at the time of the explosion. (Tucholski Rep., p. 3.) The Government has since designated Tucholski as an expert to testify on each of these issues at trial.

Before one can make a determination regarding the *impact of* the explosion on certain of the EMC-423's components, one must first understand the forces *generated by* that explosion. Tucholski lacks any such understanding. He has no idea what forces were generated by the explosion—a fact he candidly admits. (See, Deposition of David Tucholski conducted on Sept. 20, 2010, excerpts attached hereto as Exhibit H, hereinafter "Tucholski First Dep.," 94:15-95:4.) He also has no idea as to the direction or the angle of the explosive force. (*Id.*) Further, Tucholski does not know what could have struck the standpipe and heat trace system during (or even after) the explosion. (See, Deposition of David Tucholski conducted on July 28, 2011, excerpts attached hereto as Exhibit I, hereinafter "Tucholski Second Dep.," 97:7-8.) Despite this lack of understanding of the explosion and its dynamics, Tucholski nevertheless is more than willing to opine on the various impacts that explosion had. He does so by trying to recreate the

explosion's force (whatever that must have been) with a contract lab assistant and a three pound hammer. Plainly, this is something that simply cannot be done.

2. Tucholski's Methodology Cannot Pass Muster.

To assess whether the standpipe's ball valve could have rotated from the closed to the open position, Tucholski created a small forest of exemplar standpipes and then asked a contract assistant to strike the handle on the ball valve of each with a hammer "as hard as he could." (Tucholski First Dep., 95:1-4.) Tucholski took no precautions to verify that the assistant applied the same force in each test, or that the handle was struck in the same place and from the same angle. (*Id.* at 95:5-8.) In fact, he does not believe that any standard, uniform, replicable force was necessary for his testing. (*Id.*)

Tucholski's testing to determine if the standpipe once had a cap atop it and whether the heat trace line was connected to the rest of the system was performed in much the same manner. That is, Tucholski again used a three-pound hammer and had his assistant try to knock a cap off the exemplar standpipes, and he beat on exemplar sections of heat trace line without any analysis of, or appreciation for, the actual conditions and circumstances surrounding the explosion. (*Id.* at 103:11-107:2.)

With regard to the heat trace tubing, Tucholski opines that, had the system been connected at the time of the explosion, the tubing would have shown more signs of deformation than it did when it was recovered. (Tucholski Second Dep., 120:21-121:5; Tucholski Rep., p.11.) Notably, Tucholski forms this opinion based only on visual inspection of the tubing (no testing, modeling or simulation) and admits that he's never had any training on this subject or

worked with similar tubing that had been through an explosion like that of the cargo aboard the EMC-423. (Tucholski Second Dep., 121:1-123:21.)

Federal Rule of Evidence 702 provides that where expert testimony will assist the trier of fact, a qualified expert witness may testify “if (1) the testimony is based upon sufficient facts or data, (2) the testimony is a product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.” Fed. R. Evid. 702; *Happel*, 602 F.3d 820, 824 (7th Cir. 2010). When assessing the second of these elements, the expert’s methodology, the Supreme Court has identified the following factors as pertinent to the inquiry: (1) whether the theory has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or potential rate of error; and (4) whether it has been generally accepted within the relevant scientific community. *Daubert*, 509 U.S. at 593-94; *Happel*, 602 F.3d at 824.

Tucholski’s methodology clearly falls short of the *Daubert* standard. While Tucholski quite obviously tested his theories (even though using suspect methodologies) and these tests were reviewed by his peers at the ATF lab (the first two *Daubert* elements), there just is no way to calculate the potential rate of error of Tucholski’s testing. As he admits, Tucholski had no idea as to the magnitude and direction of the forces applied to any component of the EMC-423 during the explosion. Further, no steps were taken to ensure that the hammer blows to the replica equipment were uniform and consistent. Accordingly, it would be completely impossible to calculate the potential rate of error for Tucholski’s testing or attempt to recreate his experiments.

Tucholski has made no showing that his chosen methodology, a methodology he admits to inventing (Tucholski First Dep., 93:8-15), is generally accepted by the scientific community.

It falls to the proponent of an expert's testimony to demonstrate such testimony would satisfy the *Daubert* standard. *Lewis*, 561 F.3d at 705. Because Tucholski has failed to make a showing that his methodology has a known rate of error and is generally accepted within the scientific community (and not just by his ATF peers) his methodology fails to meet the requirements of *Daubert* and his testimony must be excluded from trial.

3. Tucholski's Opinions are not Reliable.

Even if this Court somehow were to find Tucholski's methodology appropriate under the *Daubert* standard (which it should not), Tucholski still should be barred from testifying under Federal Rule of Evidence 702. That is so because Tucholski has failed to apply his methodology "reliably" to the facts of this case. Fed. R. Evid. 702. Frankly, the only real lesson to be gleaned from Tucholski's methodology relates to the damage a human being can do to certain plumbing fixtures with a three-pound hammer. And that's it. Naturally, this fact is not in any meaningful way applicable to this particular case.

It is quite a leap of logic (and certainly far from a reliable one) to extrapolate from Tucholski's back-yard hammer experiments to what could and could not have been done by the massive explosion that ripped the EMC-423 to shreds. Tucholski's methodology (suspect as it is) was not reliably applied to the facts of this case. Thus, he cannot be permitted to testify about it at trial.

d. Brian Hall

The Government proposes to offer Captain Brian Hall as an expert witness on the topic of maritime safety. Yet Captain Hall has limited experience with tank barges carrying petroleum

cargoes. (See, Deposition of Brian J. Hall, excerpts attached hereto as Exhibit J, hereinafter “Hall Dep.,” 37:18-39:11 (describing the *one* time Hall has ever been aboard a tank barge carrying a petroleum cargo).) Hall has *never* been involved with the handling of elevated temperature cargoes (such as the CSO cargo at issue in this case), and he has *never* loaded or unloaded a vessel under his tankerman’s license. (*Id.* at 35:8-16, 41:7-16.)

As a professor of safety courses at the United States Merchant Marine Academy, Captain Hall perhaps is qualified to opine on the general topic of maritime safety. However, in what has become something of a trend, the Government attempts to stretch Captain Hall’s testimony well beyond the bounds of his competence. For example, Captain Hall’s opinions extend all the way to the cause and origin of the explosion of the cargo aboard the EMC-423—a subject clearly outside of his expertise. Moreover, the Government has asked Captain Hall to opine on a hodge-podge of oddball safety issues that are completely irrelevant to the explosion at issue in this case. Its only reason for doing so is improperly to malign what Captain Hall perceives to be the “safety culture” at EMC. Such slander-by-expert simply is not proper the proper role of an expert witness in this, or any other, case.

1. *Even if Captain Hall’s Grab-Bag of Alleged EMC Safety Violations Were True, They do not Demonstrate the Requisite “Conscious Disregard” for Safety and are Completely Unrelated and Irrelevant to the Explosion of the EMC-423.*

The crux of Captain Hall’s expert opinion is that EMC exhibited a “pattern of unsafe practices” and exercised a “conscious disregard” for safety, which ultimately caused the explosion of the cargo aboard the EMC-423. (See, Expert Report of Captain Brian J. Hall, attached hereto as Exhibit K, herein after “Hall Rep.,” p. 4.) Captain Hall supports this opinion by arguing (incorrectly): (1) that EMC failed to have a licensed tankerman aboard the barge at

all times; (2) that its crewmembers failed to wear their life jackets; (3) that its crewmen smoked on deck; and (4) that it employed “fire production actions” without a gas-free inspection. (*Id.*) Even if these allegations were true (which they are not), Captain Hall cannot support his opinion that EMC *consciously* disregarded safety based on them alone. Captain Hall admits that EMC’s own safety policies actually *prohibited* each of these alleged infractions. (*See, e.g.*, Hall Dep., 187:22-188:11.) He also admits that if EMC’s crewmembers were caught violating those safety policies, they were immediately corrected by their EMC supervisors. (*Id.* at 162:3-16.) Thus, one is at a loss to understand how Captain Hall or any expert can conclude that EMC showed a conscious disregard for safety when it had all of the requisite safety policies in place and it enforced those very same policies. This is not credible expert testimony. It is merely renting an expert’s mantle in order to make an unwarranted attack on EMC. And it quite clearly invades the province of the fact-finder.

Nearly all of alleged safety concerns raised by Captain Hall are in no way related to or causative of the explosion aboard the EMC-423. Those that could potentially be relevant are unsupported by *any* facts whatsoever. For instance, Alex Oliva’s alleged failure to wear a life jacket is clearly unrelated to what caused the explosion. So too is whether a licensed tankerman was on board the barge at all times.⁸ Similarly, while Captain Hall’s opinion regarding smoking on deck would appear to be pertinent, in point of fact it is not. The Government’s own experts emphatically deny that the explosion could have been ignited by Alex Oliva smoking on deck. (*See*, Deposition of John DeHaan, excerpts attached hereto as Exhibit L, 312:6-9.) Having thus removed all of the irrelevant information, all that is left to support Captain Hall’s opinion

⁸ A tankerman’s duties involve, exclusively, the loading and unloading of cargo. Because the explosion aboard the EMC-423 occurred while she was in transit (neither loading nor unloading) the presence of a tankerman is entirely irrelevant.

regarding EMC's supposed disregard for safety is Alex Oliva's alleged use of a propane torch aboard the EMC-423.

As addressed in detail in EMC's Consolidated Motion in Limine (the contents of which are adopted and incorporated by reference herein), there simply is no direct evidence that such a torch was used aboard the EMC-423. Ever. Certainly no one ever saw Alex Oliva using a propane torch on the barge. And that is all that Captain Hall is left with in support of his opinion: a phantom event for which no direct evidence exists. EMC does not dispute that, generally speaking, the use of a torch aboard a loaded tank barge carrying petroleum cargos is likely to be a safety concern. But there is absolutely no evidence that that has *ever* occurred on one of EMC's vessels.

2. *Captain Hall's Opinions Stray Outside of His Expertise in Marine Safety.*

In addition to highlighting safety concerns that are both unsubstantiated and irrelevant to the facts of this case, Captain Hall's expert report includes opinions that are outside of his area of expertise. For instance, in his expert report, Captain Hall opines that "the explosion which resulted in the fire and subsequent sinking of the barge was caused by the unsafe use of the "Rosebud" in conjunction with the open vent pipe from cargo tank no. 4 and these 2 actions resulted in the death of Alex Oliva." (Hall Rep., p. 4.) Captain Hall is not an explosion cause and origin expert—a fact that both he and counsel for the United States candidly admit. (Hall Dep., 57:1-3, 128:4-19.) Accordingly, Captain Hall cannot be permitted to testify about what caused the explosion aboard the EMC-423.

An expert's "qualifications alone do not suffice" in allowing him to testify at trial. *Lewis*, 561 F.3d at 705. Even "[a] supremely qualified expert cannot waltz into the courtroom and

render opinions unless those opinions are based upon some recognized scientific method and are reliable and relevant under the test set forth by the Supreme Court in *Daubert*.” *Id.* “An expert’s work is admissible only to the extent that it is reasoned, uses the methods of the discipline, and is founded on data.” *Naeem*, 444 F.3d 593, 608 (7th Cir. 2006). “Talking off the cuff—deploying neither data nor analysis—is not an acceptable methodology.” *Id.* Captain Hall may be qualified to testify as an expert. Seventh Circuit jurisprudence, however, prohibits him from ‘waltzing into the courtroom’ and ‘talking off the cuff’ on any subject he sees fit. Accordingly, EMC respectfully requests that this Court limit Captain Hall’s testimony solely to that which is relevant and applicable to this case, and that anything else be excluded from trial.

III. CONCLUSION

WHEREFORE, for the reasons set forth above, Defendant Egan Marine Corporation respectfully moves, *in limine*, for the exclusion from trial of the expert testimony of Peter Wakefield, Hendrik van Hemmen, David Tucholski and Brian Hall.

Respectfully Submitted,

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CERTIFICATE OF SERVICE

I, the undersigned attorney, certify that on this 30th day of August, 2011, I caused a true and complete copy of the foregoing document to be served on the following counsel by the Federal ECF Filing System:

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